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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,682	12/12/2001	Hashem Akhavan-Tafti	Lum 4.1-79	1588

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EXAMINER

JOHANNSEN, DIANA B

ART UNIT

PAPER NUMBER

1634

DATE MAILED: 11/13/2002

b

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/017,682	AKHAVAN-TAFTI, HASHEM
	<b>Examiner</b>	<b>Art Unit</b>
	Diana B. Johannsen	1634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 December 2001.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-29 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 December 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input checked="" type="checkbox"/> Other: <i>Notice to Comply</i> .      |

**DETAILED ACTION**

***Reissue Applications***

1. Applicant is reminded of the continuing obligation under 37 CFR 1.178(b), to timely apprise the Office of any prior or concurrent proceeding in which Patent No. 6,001,614 is or was involved. These proceedings would include interferences, reissues, reexaminations, and litigation.

Applicant is further reminded of the continuing obligation under 37 CFR 1.56, to timely apprise the Office of any information which is material to patentability of the claims under consideration in this reissue application.

These obligations rest with each individual associated with the filing and prosecution of this application for reissue. See also MPEP §§ 1404, 1442.01 and 1442.04.

2. The original patent, or a statement as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

Receipt is acknowledged of the Offer to Surrender Letters Patent filed December 12, 2001.

***Recapture***

3. Claims 1-29 are rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. See *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 45 USPQ2d

1161 (Fed. Cir. 1997); *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application.

In claims 1 and 23 and claims dependent therefrom, Applicant has omitted the recitation that “each oligonucleotide 5'-monophosphate consists of not more than 10 bases” and amended the claims to recite that “each oligonucleotide 5'-monophosphate has up to about 10 bases.” New claims 24 and 27 and claims dependent therefrom require that “the length of each of the oligonucleotide 5'-monophosphates is relatively short in comparison to length of the primer”/“each oligonucleotide 5'-monophosphate is relatively short in comparison to length of the primer;” however, these claims do not recite a minimum length for the primer or a maximum length for the oligonucleotides. With respect to claims 1 and 23 and claims dependent therefrom, and claims 25 and 28, it is noted that the recitation “has up to about 10 bases” is sufficiently broad so as to encompass oligonucleotides longer than 10 bases, whereas the language “consists of not more than 10 bases” is not.

In paper no. 7 of application no. 09/241,353, Applicant amended each of the pending independent claims to require a primer/primers having “at least 15 bases” and

to require that each oligonucleotide 5'-monophosphate "consists of not more than 10 bases." In the Remarks of that paper, in Applicant's comments regarding the Interview conducted in parent application 09/121,887, it was stated that "During the interview, it was discussed that amending independent Claims 25 and 48 [of the '353 application] to recite a minimum size of the primer, a maximum size of the oligonucleotides, that the priming and ligation are conducted by use of a mixture in which all components are present in admixture and under conditions where only the primer could stably hybridize would distinguish from the prior art of record." Accordingly, the prosecution history of the '353 application makes clear that the limitations on oligonucleotide length and primer length which have been omitted from the claims of the instant reissue application were added to the claims of the '353 application to make the claims allowable over the prior art. As the omitted limitations and the broader elements of the reissue claims as amended (specifically, primers less than 15 bases in length and oligonucleotides greater than 10 bases in length) relate to subject matter previously surrendered by Applicant, impermissible recapture exists. See MPEP 1412.02.

***Sequence Listing***

4. This application includes sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. Appropriate corrections for compliance are

required. Applicant is requested to return a copy of the attached Notice to Comply with the response to this Office action.

***Claim Objections***

5. Claims 25 and 28-29 are objected to because of the following informalities.

Claims 25 and 28 recite "The method claim 24"/"The method claim 27" where they should recite, e.g., "The method of claim 24"/"The method of claim 27." Claim 29 recites "each primers" where it should recite, e.g., "each primer." Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 24-29 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claim 24 recites the limitation "wherein the length of each of the oligonucleotide 5'-monophosphates is relatively short in comparison to length of the primer." Independent claim 27 recites the limitation "wherein each oligonucleotide 5'-monophosphate is relatively short in comparison to length of the primers." The instant specification does not provide basis for oligonucleotide 5'-monophosphates that are "relatively short in comparison to length of" the primer/primers of the invention. The

specification does state at column 11, lines 41-44 and column 12, lines 4-6 that oligonucleotide 5'-monophosphates employed in the methods of the invention are "preferably relatively short." However, these statements in the specification do not make reference to oligonucleotide length "relative" to primer length, and the specification does not otherwise disclose oligonucleotides that are "relatively short in comparison" to the primers of the invention. Thus, the specification does not provide basis for oligonucleotide 5'-monophosphates having the particular characteristic of being "relatively short in comparison to length" of the primer/primers, and this recitation in the claims therefore constitutes new matter.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 24-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 24-29 are indefinite over the recitation of the phrases "wherein the length of each of the oligonucleotide 5'-monophosphates is relatively short in comparison to length of the primer" in claim 24 and "wherein each oligonucleotide 5'-monophosphate is relatively short in comparison to length of the primers" in claim 27. It is unclear as to what this recitation is intended to require with respect to the lengths of the oligonucleotide 5'-monophosphates and the primer(s). For example, would any length shorter than that of the primer be considered "relatively short," or would the oligonucleotides need to be 3 nucleotides shorter, 5 nucleotides shorter, 10 nucleotides

shorter, etc.? As this language does not clearly apprise one of skill in the art as to the types of oligonucleotides and primers encompassed by the claims, it renders the claims vague and indefinite. If applicant's intent was merely to require that the oligonucleotide 5'-monophosphates of the claims be shorter than the primer, it is suggested that the claim could be amended to recite, e.g.: "...wherein each oligonucleotide 5'-monophosphate is shorter in length than the primer."

Claim 26 is indefinite over the recitation of the phrase "wherein each primer has..." As claim 24, from which claim 26 depends, refers to only a single "primer," it is unclear as to how the recitation of "each primer" in claim 26 is intended to further limit the claims (e.g., is this language intended to suggest that multiple primers are to be employed in the claimed method?). This rejection could be overcome by amending claim 26 to recite "wherein the primer has...."

### ***Drawings***

10. It is noted that the formal drawings have been approved by the draftsperson.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brennan (U.S. Patent No. 5,403,708) teaches a method of nucleic acid synthesis and sequencing that involves extension of a hybridized primer via ligation of short oligonucleotides. Brennan suggests that his method comprises a step of forming a primed template, followed by a step of contacting the primed template with oligonucleotides. Brennan does not teach or suggest providing a reaction mixture comprising template, primer, and oligonucleotides prior to primer hybridization, as

recited in the instant claims. Yager (U.S. Patent No. 5,888,731) teaches detection methods in which sets of probes of known sequence are simultaneously hybridized to a target molecule and ligated. However, Yager suggests that sets of probes with similar melting temperatures are employed in his methods (see, e.g., col 5, lines 5-8). Furthermore, Yager suggests employing sets of probes wherein each probe has "a length of from about 15-25" nucleotides. With respect to claims 1 and 23 and claims dependent therefrom, Yager does not teach or suggest employing in his methods a primer having at least 15 bases and oligonucleotides having up to about 10 bases. Further, with respect to independent claims 1, 23, 24, 27 and claims dependent therefrom, Yager does not teach or suggest a method in which the reaction conditions employed permit stable hybridization of a primer but not stable hybridization of shorter oligonucleotides molecules, and a method wherein "ligation of oligonucleotide 5'-monophosphates only occurs in the presence of the hybridized primer," as required by the instant claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diana B. Johannsen whose telephone number is 703/305-0761. The examiner can normally be reached on Monday-Friday, 7:30 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones can be reached on 703/308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are 703/872-9306 for regular communications and 703/872-9307 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703/308-0196.

Diana B. Johannsen  
September 10, 2002

*Carla Myers*  
CARLA J. MYERS  
PRIMARY EXAMINER